EXHIBIT D.2

Exhibit D.2 – U.S. PATENT NO. 9,185,268

US009185268B2

(12) **United States Patent**
Doser et al.

(10) **Patent No.: US 9,185,268 B2**
(45) **Date of Patent: *Nov. 10, 2015**

(54) **METHODS AND SYSTEMS FOR DISPLAYS WITH CHROMATIC CORRECTION WITH DIFFERING CHROMATIC RANGES**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1026 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **12/450,622**

(22) PCT Filed: **Dec. 14, 2007**

(86) PCT No.: **PCT/FR2007/052523**

§ 371 (c)(1),
(2), (4) Date: **Jun. 7, 2010**

(87) PCT Pub. No.: **WO2008/122700**

PCT Pub. Date: **Oct. 16, 2008**

(65) **Prior Publication Data**

US 2010/0245380 A1 Sep. 30, 2010

Related U.S. Application Data

(60) Provisional application No. 60/921,579, filed on Apr. 3, 2007.

(51) **Int. Cl.**
G09G 5/00 (2006.01)
G09G 5/10 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC ***H04N 1/6058*** (2013.01); ***G09G 5/02*** (2013.01)

(58) **Field of Classification Search**
USPC 345/581, 589–591, 600–604, 606, 345/617–620, 548–549, 204, 690, 1.1–1.2, 345/1.3, 3.1, 22, 63, 87–88; 348/253–254, 348/256, 467, 552, 555, 557, 560, 571, 577, 348/602–603, 630, 671–675, 708, 739; 358/515–518, 520, 523, 525, 448, 461; 382/162, 166–167, 254, 274, 276
See application file for complete search history.

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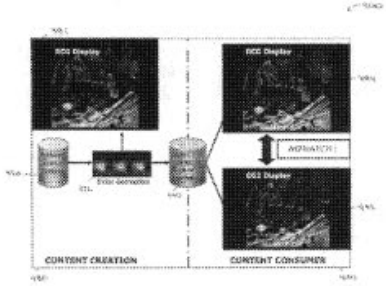
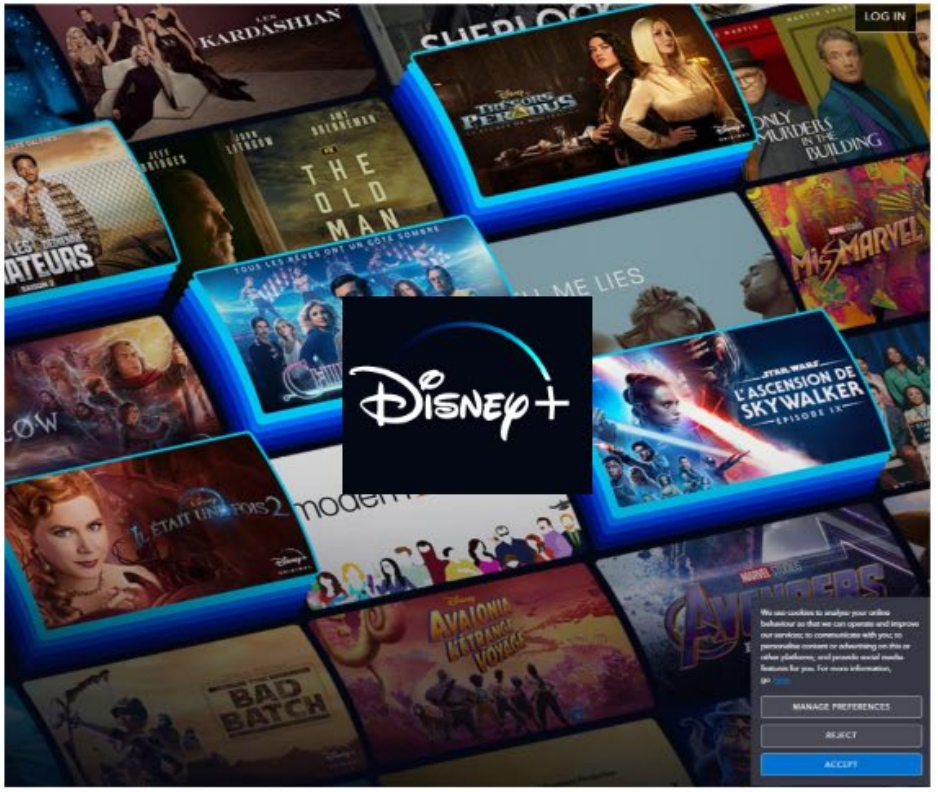
(57) **ABSTRACT**

There are provided methods and systems for color correcting displays with different color gamuts. A method includes performing color correction on source picture content, using at least one of a non-reference type display having a non-reference color gamut and a reference type display having a reference color gamut. The performing step includes mastering the source picture content to provide mastered color corrected picture content for display on the non-reference type displays having a non-reference color gamut. The performing step further includes generating metadata for a color gamut mapping that color transforms the mastered color corrected picture content for display on reference type displays having a reference color gamut. The source picture content is mastered only for the non-reference type displays having the non-reference color gamut.

30 Claims, 8 Drawing Sheets





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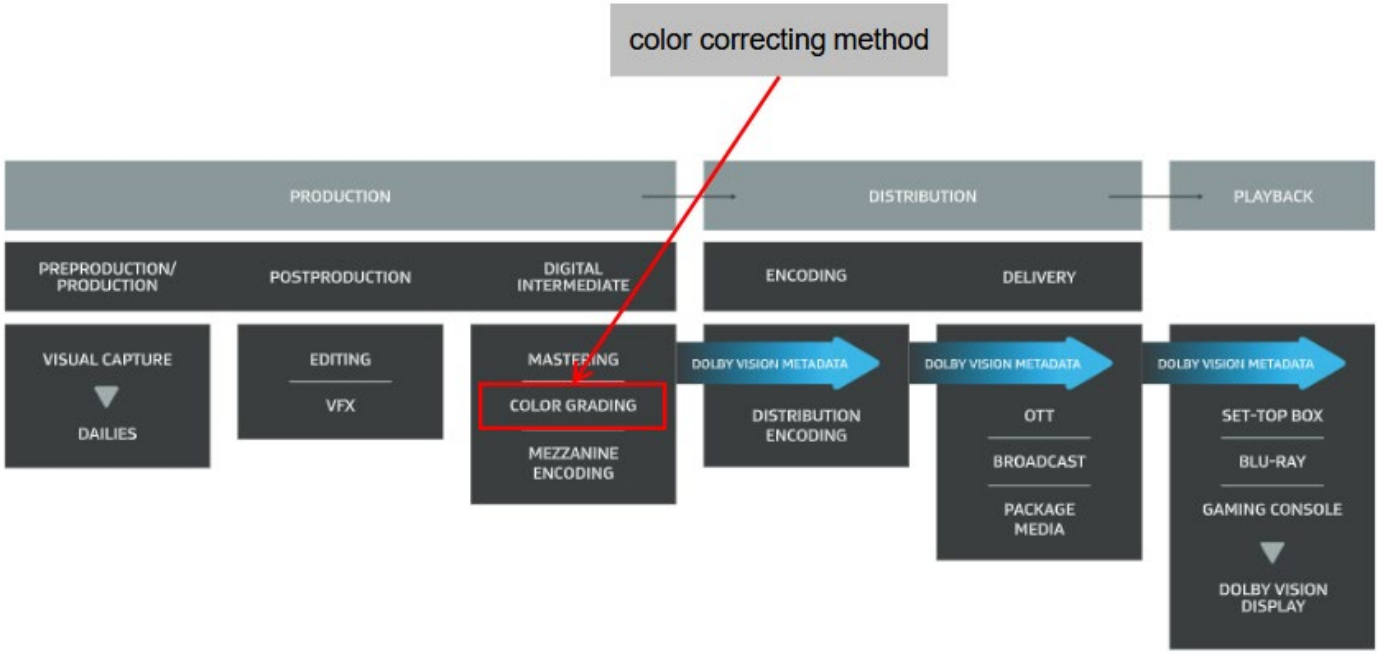
CLAIM	PUBLIC DOCUMENTATION
1[pre] A method for color correcting, comprising:	The Disney Accused Instrumentalities perform a method for color correcting. For example, the Disney Accused Instrumentalities are color corrected using Dolby Vision. The following citations provide evidence of the Dolby Vision workflow, which is used by the Accused Instrumentalities. Dolby Vision workflow includes a color correction method in the production step:  Workflow extracted from DoblyVision_white-paper10_V2.pdf document

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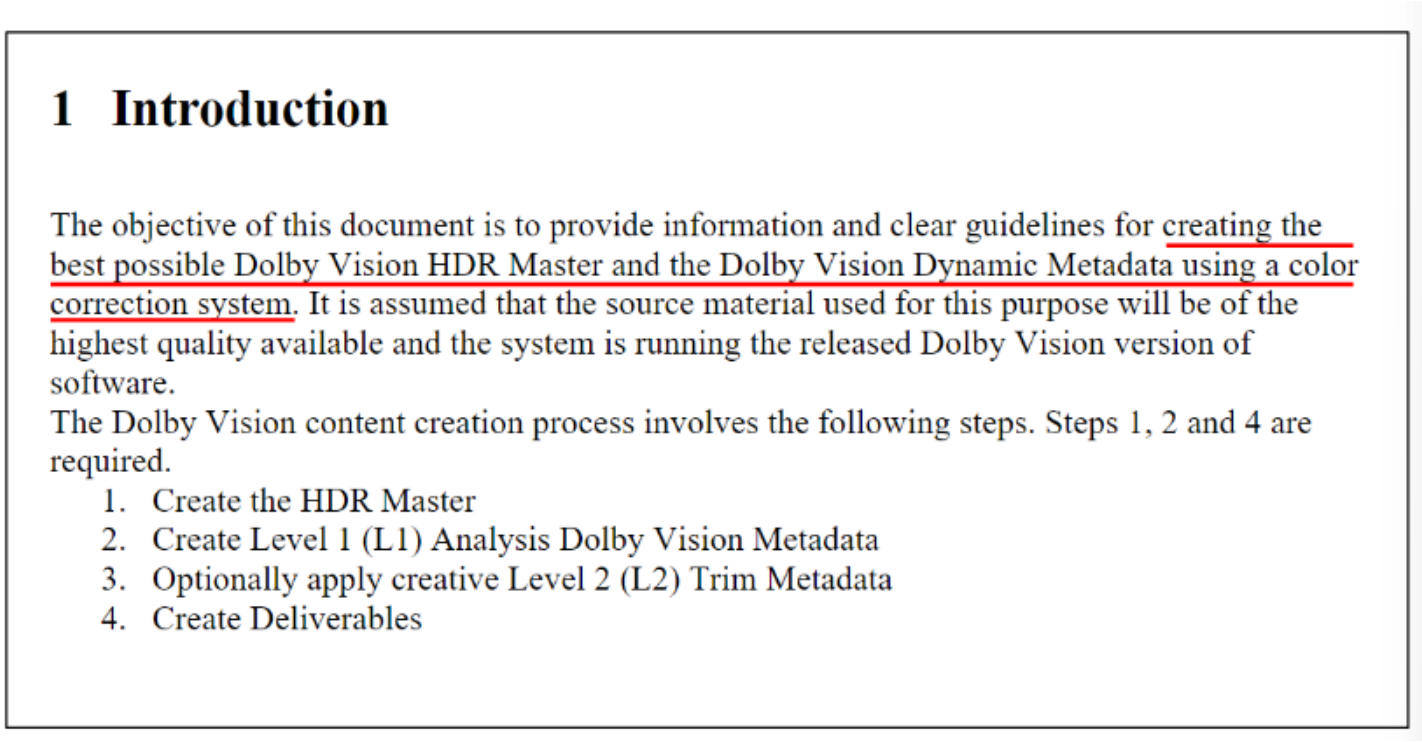
CLAIM	PUBLIC DOCUMENTATION
	 **1 Introduction** The objective of this document is to provide information and clear guidelines for creating the best possible Dolby Vision HDR Master and the Dolby Vision Dynamic Metadata using a color correction system. It is assumed that the source material used for this purpose will be of the highest quality available and the system is running the released Dolby Vision version of software. The Dolby Vision content creation process involves the following steps. Steps 1, 2 and 4 are required. 1. Create the HDR Master 2. Create Level 1 (L1) Analysis Dolby Vision Metadata 3. Optionally apply creative Level 2 (L2) Trim Metadata 4. Create Deliverables Text extracted from Dolby Vision Color Grading Best Practices Guide Version 4.3, Feb. 18, 2021 document
1[a] performing color correction on source picture content, using at least one of a non-reference type display having a non-reference color gamut	The Disney Accused Instrumentalities perform a method of performing color correction on source picture content, using at least one of a non-reference type display having a non-reference color gamut. For example, the Disney Accused Instrumentalities are color corrected using Dolby Vision.

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CLAIM	PUBLIC DOCUMENTATION
	The following citations provide evidence of the Dolby Vision workflow, which is used by the Accused Instrumentalities. For example, Dolby Vision workflow performs a color correction on source picture content, using a non-reference type display having a non-reference color gamut.

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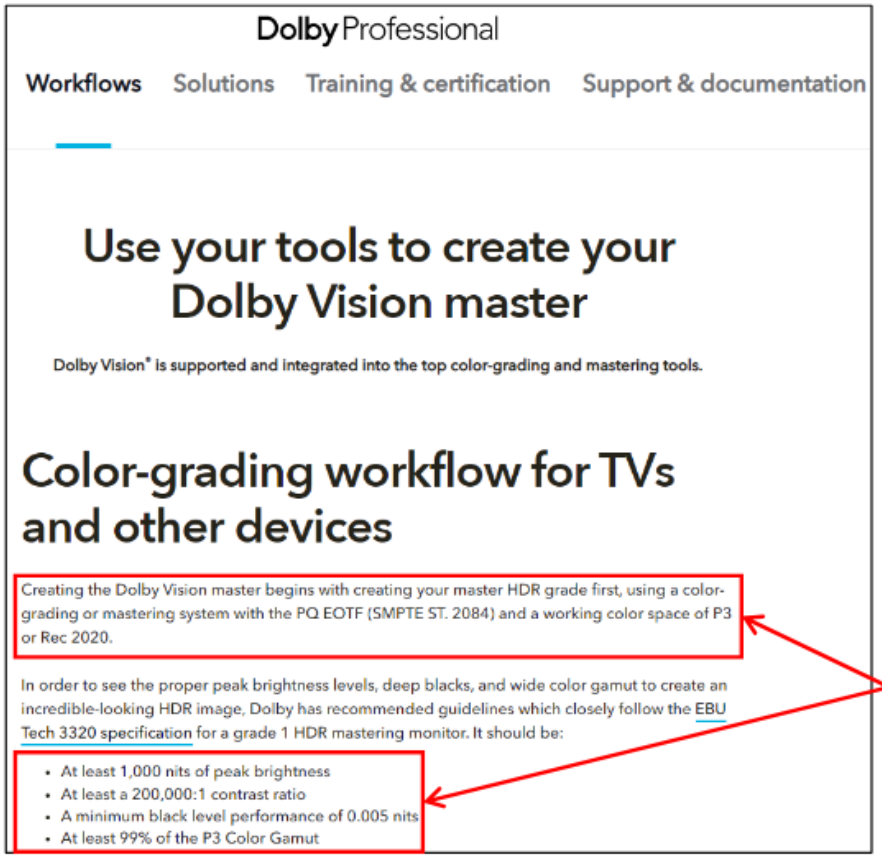
CLAIM	PUBLIC DOCUMENTATION



Tex extracted from https://professional.dolby.com/content-creation/dolby-vision-for-content-creators/ site.

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CLAIM	PUBLIC DOCUMENTATION
1[b] and a reference type display having a reference color gamut,	The Disney Accused Instrumentalities perform a method of performing color correction on source picture content, using at least one of a reference type display having a reference color gamut. For example, the Disney Accused Instrumentalities are color corrected using Dolby Vision. The following citations provide evidence of the Dolby Vision workflow, which is used by the Accused Instrumentalities. For example, Dolby Vision workflow performs a color correction on source picture content, using a reference type display having a reference color gamut.

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	Dolby Vision workflow generates automatic metadata that provides a tone-mapped version from HDR graded content for a reference display (ex: SDR 100 nits) with a reference gamut (ex. Rec 709) Once the master HDR grade is complete, you simply run the Dolby Vision analysis to automatically generate three metadata values for each shot that represent the minimum, average, and maximum luminance levels. This function is integrated into the most popular video color-grading and mastering tools. The Dolby Vision shot-by-shot metadata then allows you to see the content tone-mapped in real time, to SDR Rec. 709 100 nits, (as well as other HDR display targets like 600 nits), through a Content Mapping Unit (CMU for short). This can be either an internal integrated process or an external unit (iCMU or eCMU). When viewing the mapped version through the CMU process, many content creators then want to make adjustments to the metadata on a shot-by-shot basis using additional "artistic trim controls." This creates an additional level of metadata in a fast and easy way. The combined automatic and artistic trim metadata travels with the HDR image to Dolby Vision TV's and devices to help best deliver the creative intent of the HDR master by mapping each shot to the capabilities of the consumer device. Analysis metadata creation is included in many professional video tools at no charge. Artistic trims are available in color-grading systems but require an annual license from Dolby. the tone-mapped version metadata could be adjusted manually shot by shot by using additional « artistic trim controls » Text extracted from https://professional.dolby.com/content-creation/dolby-vision-for-content-creators/ site.
1[c] wherein said performing step comprises: mastering the	The Disney Accused Instrumentalities perform a method wherein said performing step comprises: mastering the source picture content to provide mastered color corrected picture content for display on the non-reference type

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source picture content to provide mastered color corrected picture content for display on the non-reference type displays having a non-reference color gamut;	displays having a non-reference color gamut. For example, the Disney Accused Instrumentalities are color corrected using Dolby Vision. The following citations provide evidence of the Dolby Vision workflow, which is used by the Accused Instrumentalities. For example, Dolby Vision color correction step comprises mastering the source picture content to provide mastered color corrected picture content for display on the non-reference type displays having a non-reference color gamut.

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	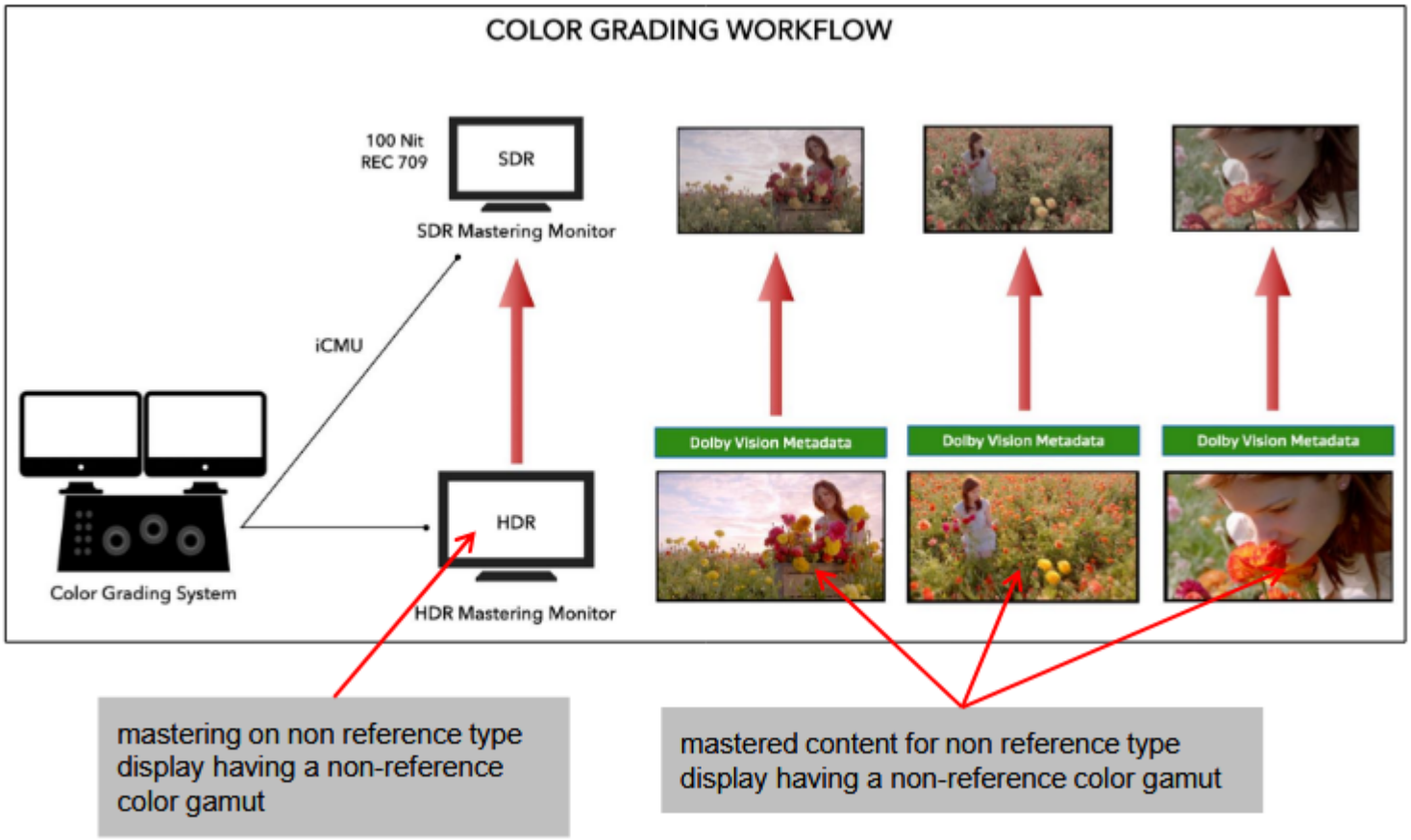 Figure extracted from https://professional.dolby.com/content-creation/dolby-vision-for-content-creators/ site.

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CLAIM	PUBLIC DOCUMENTATION
1[d] and generating metadata for a color gamut mapping that color transforms the mastered color corrected picture content for display on reference type displays having a reference color gamut,	The Disney Accused Instrumentalities perform a method of generating metadata for a color gamut mapping that color transforms the mastered color corrected picture content for display on reference type displays having a reference color gamut. For example, the Disney Accused Instrumentalities are color corrected using Dolby Vision. The following citations provide evidence of the Dolby Vision workflow, which is used by the Accused Instrumentalities. For example, Dolby Vision color correction step comprises generating metadata for a color gamut mapping that color transforms the mastered color corrected picture content for display on reference type displays having a reference color gamut.

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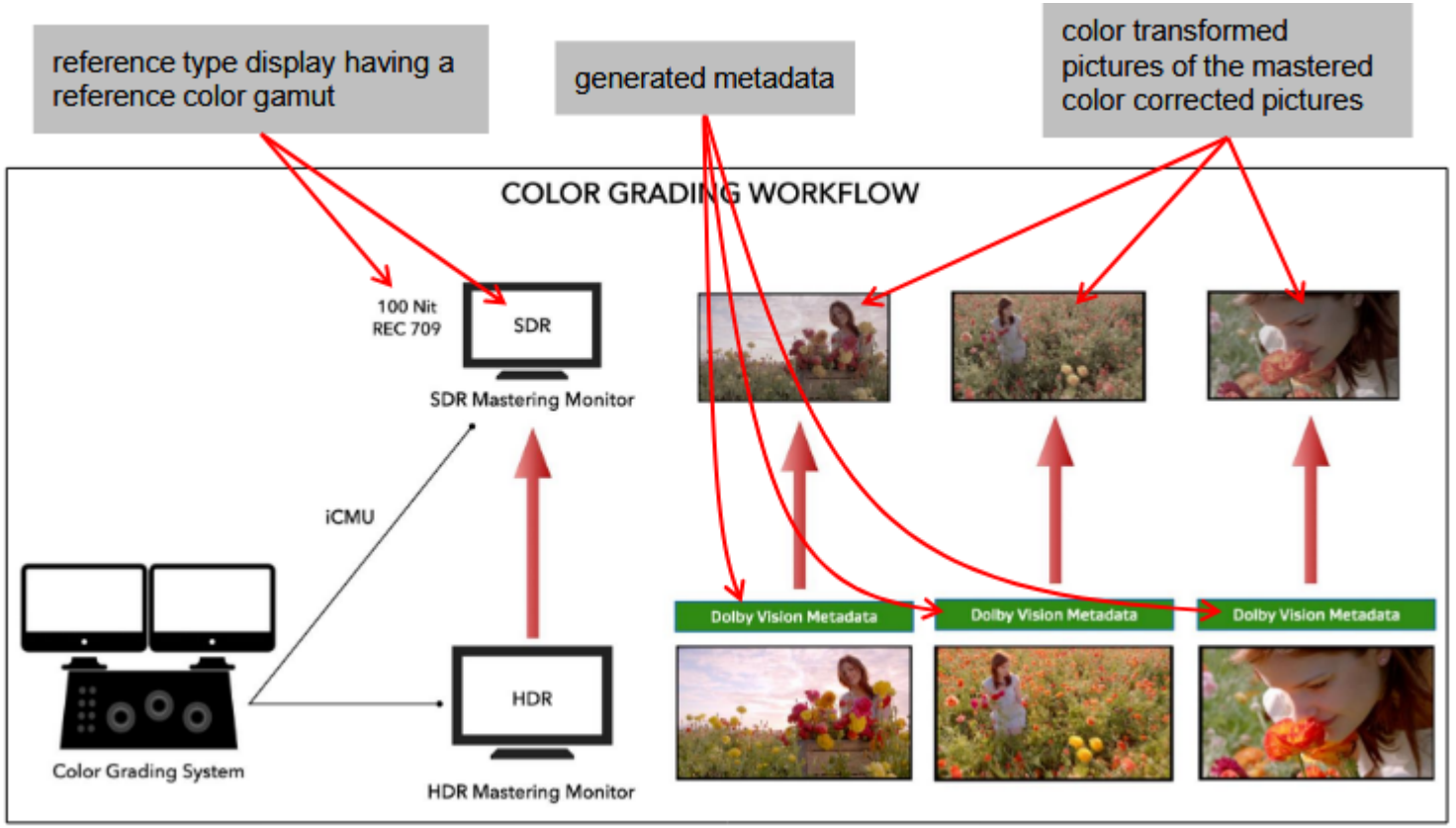
CLAIM	PUBLIC DOCUMENTATION
	 Figure extracted from https://professional.dolby.com/content-creation/dolby-vision-for-content-creators/ site. Further, Dolby Vision color correction step comprises generating metadata for a color gamut mapping that color transforms the mastered color corrected picture content for display on reference type displays having a reference color gamut.

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	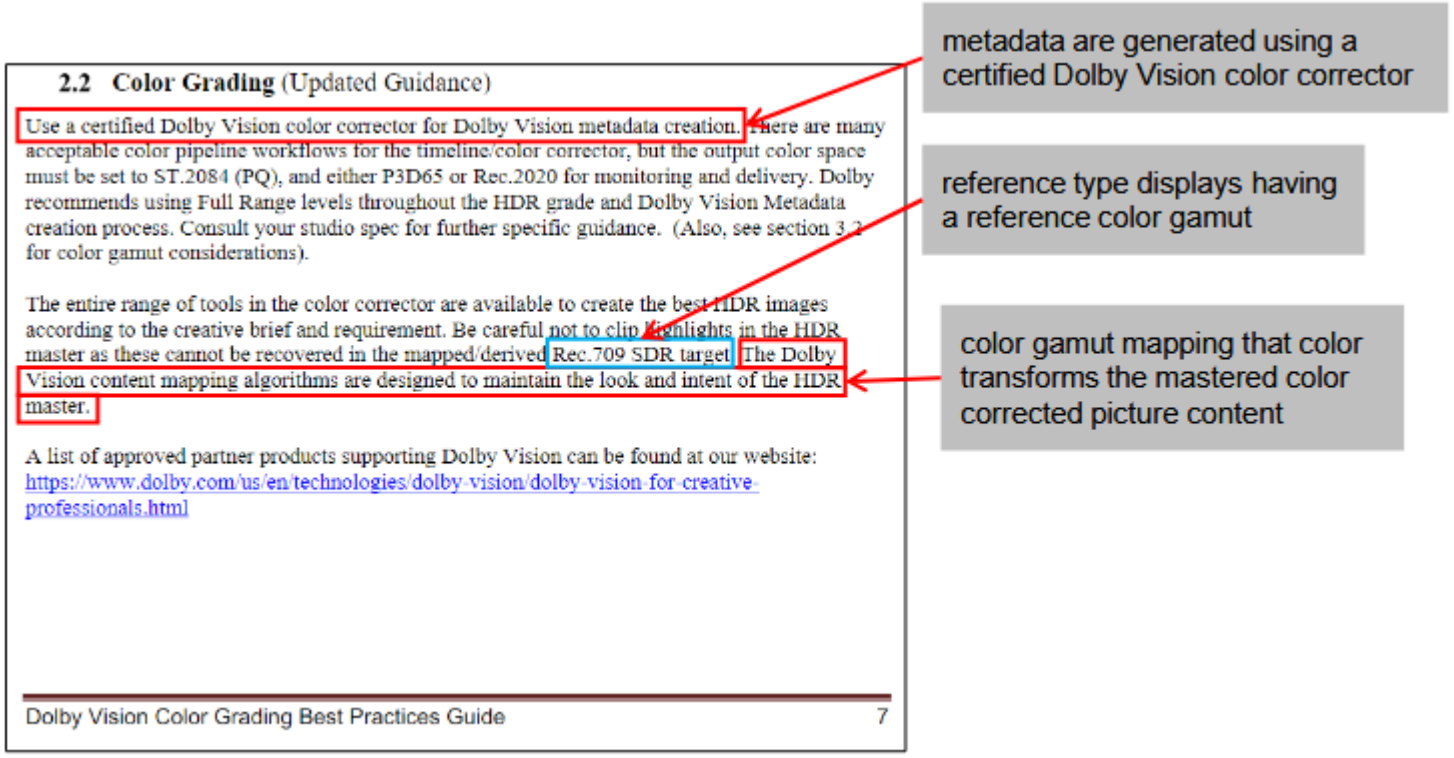 Text extracted from Dolby VisionColor Grading Best Practices GuideVersion 4.3, Feb. 18, 2021 document.
1[e] wherein the source picture content is mastered only for the non-reference type displays having the non-reference color gamut.	The Disney Accused Instrumentalities perform a method wherein the source picture content is mastered only for the non-reference type displays having the non-reference color gamut. For example, the Disney Accused Instrumentalities are color corrected using Dolby Vision.

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CLAIM	PUBLIC DOCUMENTATION
	The following citations provide evidence of the Dolby Vision workflow, which is used by the Accused Instrumentalities. For example, the source picture content is mastered only for the non-reference type displays having the non-reference color gamut.

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	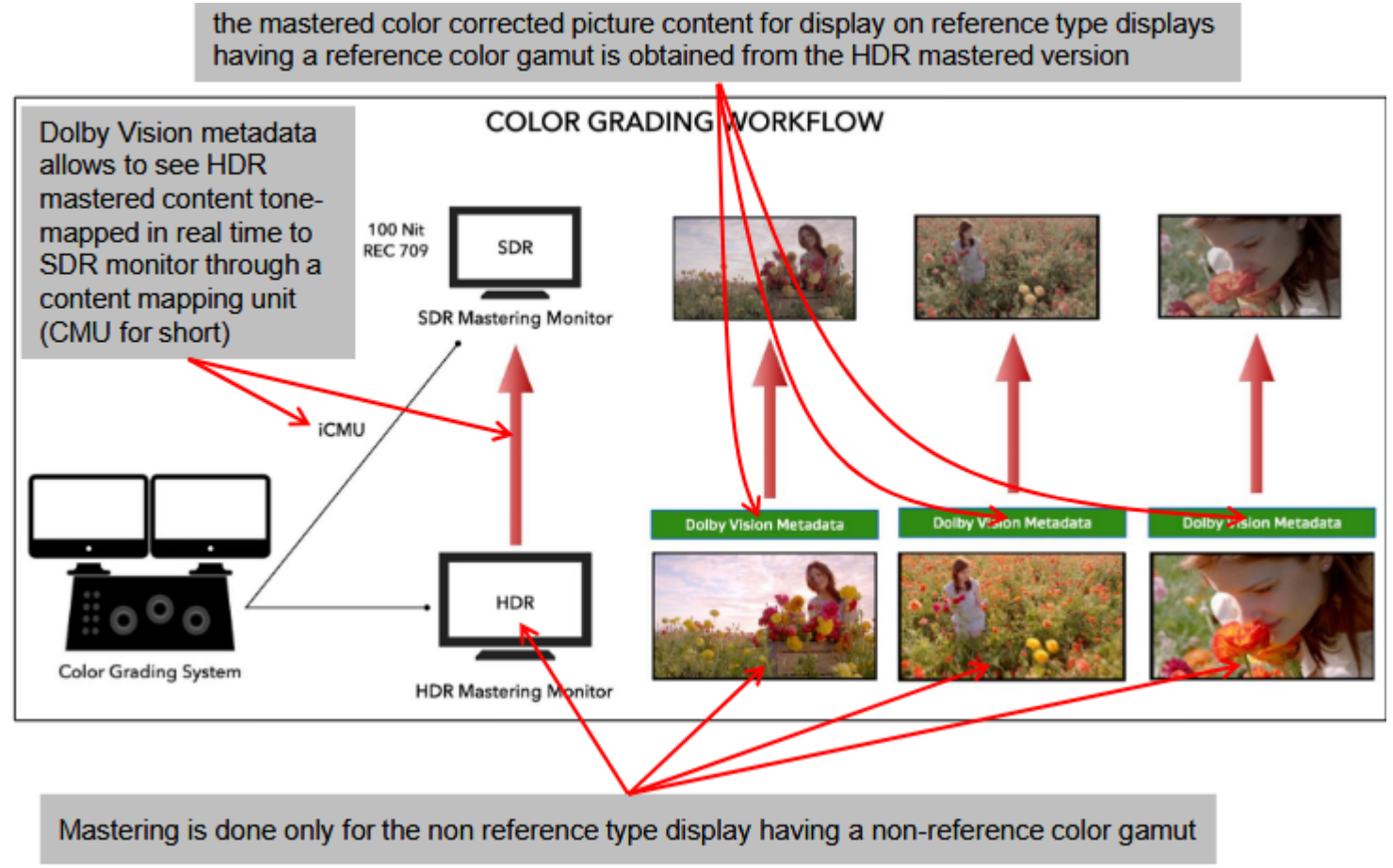 Figure extracted from https://professional.dolby.com/content-creation/dolby-vision-for-content-creators/ site.